



Patent Application of

Lanny R. Lee

For

PERSONAL FLOTATION DEVICE

ABSTRACT

Personal Flotation Device Protective
The invention, is an improved PFD is flexible tube shell with caps urged over and preferably sealed onto each end, each cap end having a clasp and preferably worn as a necklace by joining *ONE OR MORE* the clasps on each end. The flexible tube shell has a longitudinal groove and a long distensible sack with ends each having gas source. Said sack is disposed internally through the length of the tube. To activate, the PFD is stretched ~~or jerked~~ to pull the end caps off the tube. This releases *THE TENSION DEVICE THEREBY COVING THE SACKS END IN THE FLEX TUBE* *TO BE RELEASED FROM THE SOURCE* *PROVIDING AIR BAGS* *PROTECTION* *IN A BAGS SHAPE*
gas from to fill sack expanding outward causing adequate pressure to cause the flexible tube shell to be split along the internal groove and is jettisoned. The PFD is a gas filled ~~ring~~ shape, *THIS PROVIDES*

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BACKGROUND

This invention relates to personal flotation devices (PFD), specifically the inflated type of devices ~~and resist water~~ that are user operated. It is impractical for participants of many active water sports to wear any type of life jackets even when they are in open water. In many of the physically demanding water sports as surfing, diving, swimming and sailing PFD are not used, usually, because they hamper body movements and interfere with their equipment. Surfing is a popular water sports that ~~many more every year worldwide thousands of participants have been drowned. Flotation devices often~~ are not practical for use by swimmers and divers. Scuba divers are often lost to drowning because there was no last line of ~~it is unlikely~~ protection. Many PFD provided by manufacturers are worn around the waist either in boxes or in the belt. After inflation most all of these PFD require the wearer to get into openings or buckle straps. When the victim is reached for rescue most PFD interferes with the efforts and must be removed for resuscitation.

The U.S. Pat. NO. 5,823,840 to Powers (1998) is an example of a PFD that the user wears on the wrist and is inflated in place, however, deployment requires that both hands to be momentary occupied. This is time that the wearer is not likely to have and if successfully deployed will be only hold the attached hand at the surface. An example of a PFD that the user wears on the arm is U.S. Pat. NO. 6,056,612 to Markwitz (2000) still more are ones that the user wears in a box on a waistline belt are the U.S. Pat. NO. 5,738,557 to Biesecker (1998), U.S. Pat. NO. 5,820,431 to Biesecker (1998) and also to Biesecker is U.S. Pat. NO. 6,004,177 (1999). A combination waist belt and shoulder PFD is the U.S. Pat. NO. 6,036,562 to Brown (2000) and continued to U.S. Pat. NO. 6,394,866 to Brown (2002), A PFD shown in U.S. Pat. NO. 5,779,512 to Rupert(1998)

provides for concentrically joined rings to be inflated and worn at times for therapeutic swims. A transparent PFD for sun tanning purposes is seen in U.S. Pat. NO. 6,007,395 to Knoll (1999).

SUMMARY

PROVIDES A
 The invention, is an improved PFD is flexible tube shell with caps urged over and preferably sealed onto each end, each cap end having a clasp and preferably worn as a necklace by joining the clasps on each end. The flexible tube shell has an ~~internal~~ longitudinal groove and a ~~one or more~~ ~~connected internally to an end opening~~ distensible sack comprised of ~~two~~ cells, each with a gas source is disposed internally throughout the length of the tube. Each cell is connected internally to a cap. The gas source may be either a chemical gas generator or a compressed gas cartridge.

THAT PROVIDES A INFLATABLE SACK
 A PFD is achieved when either the wearer or a rescuer ~~pulls or yanks~~ any place around the ~~ends~~ ~~ends~~ ~~By pressing means of a~~ clasped "necklace" with enough force to ~~pull~~ the end caps off the tube. This ~~releases~~ ~~gas from to~~ ~~ends~~ ~~By pressing means of a~~ ~~jettisoned~~ ~~gas~~ ~~ends~~ fill each cell that expand outward causing adequate pressure to cause the flexible tube shell to be ~~lengthwise~~ ~~split along the internal groove and jettisoned.~~

To improve visibility the sack ideally will be a visible reflective color. Another aspect of the invention is that the PFD could be decorated that would encourage it's use.

Accordingly several objects and advantages of the invention provide a PFD with broader use applications.

DRAWINGS

FIG. 1 is a prospective view of the PFD when relaxed.

FIG. 2 is a prospective view of the PFD in clasped position.

FIG. 3 is a prospective view of the PFD inflated showing tube jettisoned.

FIG. 4 is a section view taken 4-4

FIG. 5 is a section view taken 5-5

DESCRIPTION

FIG. 1 is a view of a PFD 1 in accordance with the invention having a flexible tube shell 2 with tab end cap 3 and opposite end receptacle end cap 6 each sealed to the end of flexible tube shell 2. A long 10 sack comprised of cells 4 having two opposite ends each containing gas source 5 and 5 disposed in flexible tube shell 2.

FIG. 2 is a view of the PFD 1 by means bent to permit the tab end cap 3 being coupled to receptacle end cap 6 providing a clasp in encircling ring 8 circumscribing a neck area 30.

FIG. 3 is an orthographic view of the PFD 1 shown having been caused to inflate when encircling ring 8 is by means stretched causing the tub shell 2 end portion 9 each to be respectively withdrawn from tab end cap 3 and the receptacle end cap 6. The internal stress created by the inflating cells 4 causes tube shell 2 to split provided along groove 7 and is jettisoned. The invention a PDF (personal flotation device) is demonstrated when filled cells 4 having a couple clasp 16 is circumscribing a neck area 30 provide buoyancy and cushion.

FIG. 4 is a section view showing the typical end cap layout and compressed gas trigger device 18. External surface of end portion 9 is closely fitted to the internal surface 23 of end cap 3 and open end portion external surface 21 of cell 4 is joined and sealed to internal surface 21. The Service loop 20 provides slack so the tube shell 2 end portions 9 can be forcibly withdrawn respectively from tab end cap 3 and receptacle cap 6. Housing 28 is retained to the gas cartridge 22 and detent dog is biased by inside wall of tube shell 2 to retain pierce plunger and hold spring 30 in compression.

FIG. 5 is a section view showing trigger device 18 and also a section of tube wall 2 into having a longitudinal groove 7.

FIG. 6 when detent dog 32 is released allowing pierce plunger to be driven by spring 30 into *From Gas Source 5* membrane 24 thereby releasing compressed gas to fill cell 4. This is repeated at the opposite end thereby providing a redundant feature and a PFD 1 according to the invention.



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CLAIMS

HAVING AN END SING CLOSURE

1. In a personal flotation device, comprising:

a extendable sack, said sack having two ends is longitudinally disposed in a flexible tubular shell
fitted with end caps, said end are secured internal to each cap,

a gas source having a release device is contained in said end of each of said cells, and
each end cap has clasp feature and the invention is by manually bent around the neck and said
end caps are joined by said clasps, whereby

personal flotation device achieved means pulling and stretching the invention causing said end
caps to be pulled from said flexible tube shell, thereby

activating said gas source thereby releasing gas from said devices expanding said gas sack to
inflate thereby splitting said flexible tube shell along said internal groove causing said flexible tube
shell to be jettisoned.

2. - - -

3. - - -

4. . - - -

5. - - -

6. - - -



.. SHEET 1 OF 2

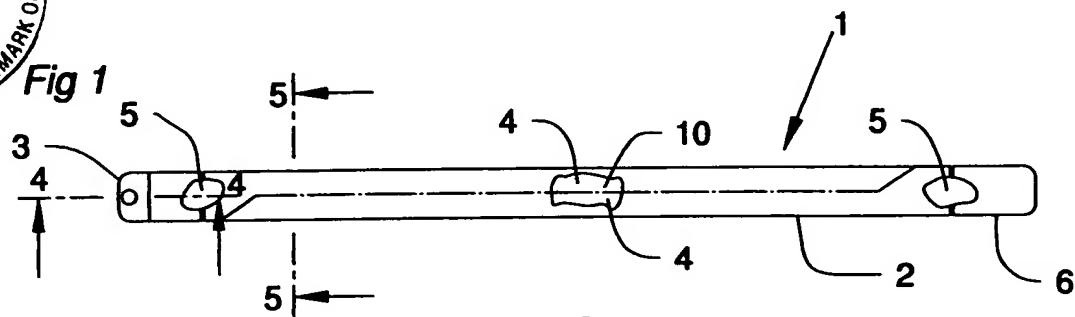


Fig 1

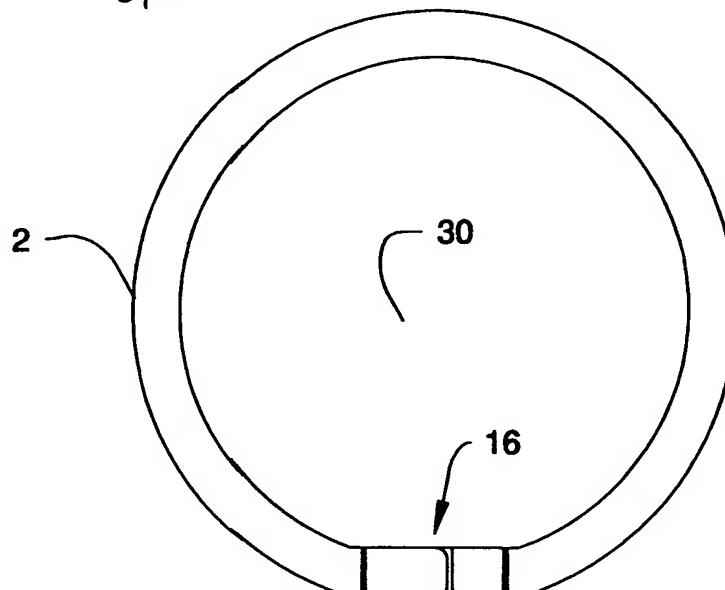


Fig 2



The diagram illustrates a cross-sectional view of a device assembly. On the left, a vertical tube 9 is shown with a flange 7 at its top. A horizontal arrow labeled 14 points to the right, indicating the direction of assembly or function. To the right, a circular frame 4 is depicted, featuring a central slot 30 and a support 16 positioned at the bottom. The number 4 is also present near the support 16.

SHEET 2 OF 2

Fig 4

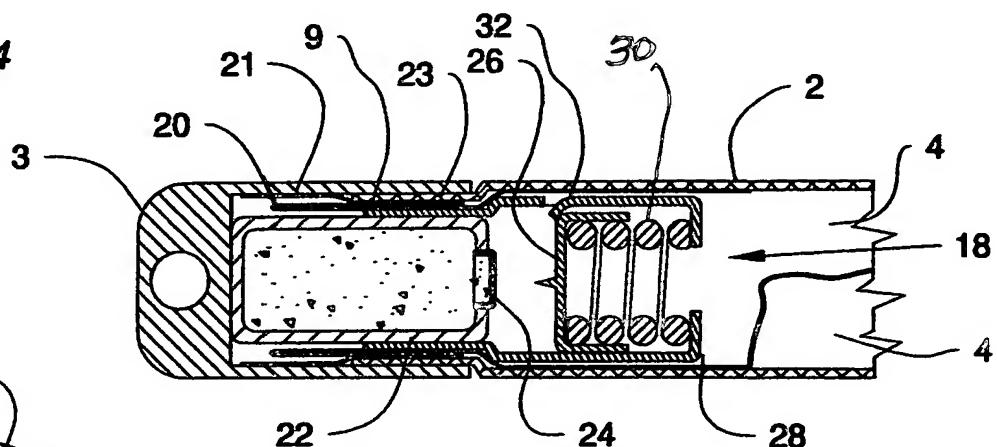


Fig 5

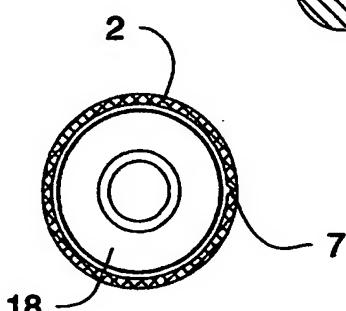


Fig 6

